Before the
Federal Communications Commission
Washington, D.C. 20554

In The Matter Of	)	
	)	
Modernizing the E-rate Program	)	WC Docket No. 13-184
For Schools and Libraries	)	
	)	

COMMENTS OF THE
SCHOOLS, HEALTH & LIBRARIES BROADBAND (SHLB) COALITION

September 16, 2013

SHLB Coalition E-rate Reform Comments
EXECUTIVE SUMMARY
Sept. 16, 2013

1. Ensuring that the nation's schools and libraries have adequate and affordable high-capacity broadband services to prepare for the challenges of the 21st century is one of the most important responsibilities of the Commission.

2. Broadband is a meta-Infrastructure – it enables all other infrastructures to work more effectively. Electricity (smart grids), transportation (intelligent highways), health care (remote telemedicine), education (distance learning and assessment), and public safety (E-911) can all operate more efficiently with the aid of broadband technologies.

3. For schools and libraries in the 21st century, high-quality broadband is their foundation for the future. Education, access to information, and other community services are increasingly moving to "the cloud," and libraries and schools need affordable, high-capacity broadband to ensure that patrons and students are able to access the information and services that they need.

4. The E-rate program is in dire need of additional funding for schools and libraries to be able to obtain affordable, high-capacity broadband. There are two ways that the Commission should provide such funding:

    a. The Commission should increase the E-rate cap to provide more funding on a permanent basis so that schools and libraries can afford higher-capacity broadband services.

    b. In addition, the Commission should create a separate, additional amount of funding in the E-rate program specifically directed to supporting the capital investment costs of deploying high-capacity broadband to schools and libraries in areas where it is not currently available.

5. The Commission should equalize the treatment of dark and lit fiber services, and applicants should be able to select the most cost-effective option. Large, upfront non-recurring charges for fiber installs should be amortized over a several year period.

6. The Commission should clarify that "managed wireless services," including those using unlicensed Wi-Fi spectrum, should be eligible for Priority 1 treatment so that schools and libraries can take advantage of their cost savings and service flexibility.

7. The Commission should increase its enforcement of the "lowest corresponding price" rule by making pricing information publicly available and by defining the term "similarly situated" to bring E-rate service prices down and make more efficient use of E-rate funds.

8. The Commission should clarify and make explicit a policy that allows schools and libraries that receive E-rate support to use a portion of their broadband capacity for community “hot spots” without using or losing E-rate support through cost allocation.

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SCHOOLS, HEALTH & LIBRARIES BROADBAND (SHLB) COALITION

The Schools, Health & Libraries Broadband (SHLB) Coalition ("SHLB Coalition")[1] respectfully submits these initial comments in response to the Notice of Proposed Rulemaking (NPRM) in this proceeding issued on July 23, 2013.

The SHLB Coalition is a broad-based coalition of organizations that share the goal of promoting open, affordable, high-capacity broadband for anchor institutions and their communities.[2] High-capacity broadband is the key infrastructure that K-12 schools, community colleges, colleges and universities, libraries, health clinics, public media and other anchor institutions need for the 21st century. Enhancing the broadband capabilities of these community anchor institutions is especially important to the most vulnerable segments of our population – those in rural areas, low-income consumers, disabled and elderly persons, students, minorities, and many other disadvantaged members of our society.

I. Introduction

The SHLB Coalition is extremely pleased that the Commission has opened this proceeding to reform the E-rate program. Upgrading the E-rate program to ensure that our nation's schools and libraries have adequate and affordable high-capacity broadband is one of the most important actions

[1] "SHLB Coalition" is pronounced "SHELL-bee Coalition."
[2] Our members include representatives of schools, libraries, state broadband mapping organizations, private sector companies, state and national research and education networks, foundations, and consumer organizations. See www.shlb.org for a complete list of SHLB Coalition members.

that the Commission can take to improve the nation's readiness to meet the challenges of the 21st century.

President Obama launched the ConnectED Initiative in June, an ambitious program intended to connect libraries and schools covering 99% of America's students to high-speed wireless and high-speed broadband (at speeds no less than 100Mbps and with a target of 1Gbps) within 5 years. The President called on the Commission to modernize and leverage the existing E-rate program to achieve these goals.

The SHLB Coalition welcomed the President's announcement. In our statement, the SHLB Coalition Executive Director said,

> The SHLB Coalition applauds President Obama's announcement of the ConnectED Initiative. Schools, libraries and other community anchor institutions have a critical need for affordable, high-speed connections to the Internet to provide essential educational, medical, and information services for their communities. Together, schools and libraries ensure learners have access to technology-enabled and personalized educational opportunities during the school day—and beyond. From online assessments to interactive online tutoring and research resources, high-capacity bandwidth is essential to powering a robust educational ecosystem.

II. Providing Affordable, High-Capacity Broadband for Schools and Libraries is Vitally Important to our Nation's Future.

Broadband is a meta-Infrastructure – it enables all other infrastructures to work more effectively. Electricity (smart grids), transportation (intelligent highways), health care (remote telemedicine), education (distance learning and assessment), and public safety (E-911) can all operate more efficiently with the aid of broadband technologies.

For schools and libraries in the 21st century, high-quality broadband is their foundation for the future. Education, access to information, and other community services are increasingly moving to "the cloud," and libraries and schools need affordable, high-capacity broadband to ensure that patrons and students are able to access the information and services that they need. Furthermore, schools and libraries need a different form of broadband than the typical residential customer. Schools and libraries are "multi-user" environments, with tens and perhaps hundreds of people and devices sharing the same broadband connection at the same time.

The SHLB Coalition endorsed the 1 Gbps goal in the National Broadband Plan when it was issued in March 2010, and we also support the 100 Mbps to 1 Gbps goals articulated by President Obama, the State Educational Technology Directors Association (SETDA), and FCC Commissioner Rosenworcel.

There is no question that schools and libraries are chafing at the limited bandwidth available today. The lack of affordable, high-capacity broadband prevents schools from being able to incorporate technology into the classroom to teach students how to develop the skills to take best advantage of these technologies. The lack of bandwidth at libraries and schools holds back the entire community from benefiting from Internet access services.

III. The E-rate Program Is In Dire Need of Additional Funding So that Schools and Libraries Can Obtain the High-Capacity Broadband They Need to Serve the Public.

The E-rate program has been successful in ensuring that schools and libraries can obtain basic telecommunications and broadband services at affordable rates for many years. While there is a need for some adjustments to the program, the biggest problem is that there is simply not enough funding to meet the schools' and libraries' broadband needs. Schools and libraries are caught in a dilemma – they must incorporate new, higher-priced technology and broadband capability into their buildings if they are to carry out their missions, but they often have less funding than they had a few years ago. There are two ways that the Commission should provide such funding:

a. The Commission should increase the E-rate cap to provide more funding on a permanent basis so that schools and libraries can afford higher-capacity broadband services.

The E-rate program funding level has not kept pace with the schools' and libraries' need for greater broadband connectivity. The initial "cap" was established in 1997, long before high-capacity broadband became such a necessity. Even though the "cap" has been adjusted for inflation each year since 2010, the demand for E-rate support has grown well beyond the current cap and is likely to continue to grow. E-rate applicants are now submitting requests for about $5 billion in funding, about twice the amount of funding available. Actual demand is probably much higher than $5 billion, as many potential applicants have chosen not even to apply for Priority 2 services, knowing that they would not be funded. Furthermore, the trends show that requests for Priority 1 funding alone may soon exceed the cap.

The funding shortfall is apparent if one compares the level of E-rate funding to federal spending on information technology (IT). According to one source, federal IT spending grew at a historical average of 6% per year in the first decade of the 21st century.[3] Applying this 6% growth rate to the E-rate cap of $2.25 B set in 1997 would mean that the E-rate cap should be at $6 B per year beginning in

[3] http://www.marketresearchmedia.com/?p=193.

2014 just to keep up with the growth in IT spending by the Federal Government. A significant increase in the existing level of E-rate funding is necessary and should be pursued in parallel with the modernization of the program.

The trends of the last 17 years are unlikely to come to a screeching halt any time soon. The tablet market will continue to explode,[4] wireless (Wi-Fi) access to the Internet will continue to expand, video traffic will grow to 69% of all Internet traffic by 2017.[5] Akamai's data shows that the average connection speed in the U.S. practically doubled (from 4 Mbps to 8 Mbps) in the five years from 2008-2013.[6] All these trends point to the need for more bandwidth for years to come.

The Commission should raise the annual cap on a permanent basis to an amount that is more consistent with the amount of funding that applicants need to serve their communities for the 21st century. Congress created and authorized the E-rate program with the broad goal of ensuring that schools and libraries are connected to the Internet and could provide their students, teachers and communities with access to the most advanced technologies necessary to succeed in the "Information Economy." Congress gave the Commission wide latitude to take the steps necessary to achieve that goal. If the Commission fails to provide additional funding to the E-rate program, it risks failing to carry out the intent of Congress in creating the program.

b. The Commission should create a separate, short-term capital investment fund within the E-rate program to support the deployment of high-capacity broadband to schools and libraries by any entity, in addition to increasing the cap on the traditional E-rate program.

Another approach to providing more funding is for the Commission to establish a short-term capital investment fund within the E-rate program. The high up-front costs of deployment often stand in the way of schools and libraries being able to obtain access to high-capacity broadband networks. But once deployed, these networks can yield significant cost savings for schools and libraries in future years. For instance, deploying fiber optic networks, where feasible, can offer far greater capacity than traditional (e.g., copper circuit) broadband services, and capacity can be added relatively easily by manipulating the electronics on either end of the fiber cables. Other types of broadband networks –

[4] "Forester predicts tablet sales will continue their rocket-like growth trajectory in the coming years, with a projected compound annual growth rate of 25.6% between 2012 and 2017." http://techcrunch.com/2013/08/06/forrester-tablets/.
[5] http://motherboard.vice.com/blog/the-next-five-years-of-explosive-internet-growth-in-seven-graphs.
[6] www.akamai.com/stateoftheinternet.

such as wireless and cable – can also provide scalable, high-capacity services, especially if they are deployed using state-of-the-art technologies.[7]

There are a number of examples of projects that have successfully installed high-capacity networks to serve the needs of schools and libraries and that are now reaping the benefits of these cost-savings. The Broadband Technology Opportunities Program (BTOP), for instance, provided approximately $3.5 billion in deployment funding for 114 broadband infrastructure projects, and almost all of these projects have been successful in connecting anchor institutions with high-capacity bandwidth at affordable prices. The Houghton Lake Public Library in Michigan is one of the libraries that has benefited from a Merit Network project. "For so long we have not pursued the Internet's possibilities due to our bandwidth limitations, and now we can finally move forward," said Kim Frazho, the library's technology coordinator and trainer. The library now has 333.3 times the capacity it once had – moving from two T-1 circuits (3 Mbps) to a 1 Gbps fiber connection – at one-tenth of the cost. The Frisco, Texas, school district, is deploying its own fiber optic network because it will achieve significant cost savings in five to eight years.[8] The company Fatbeam is installing dark fiber for the school districts in Yakima, Washington, Butte, Montana, and Coeur d'Alene, Idaho. Several other commercial companies, such as Midwest Fiber Networks,[9] Sunesys,[10] Champion One,[11] Unite Private Networks[12] (none of whom are SHLB members) and others are experienced at building fiber networks specifically designed to address the needs of school districts.[13]

The Commission can help to promote deployment of these networks by creating a short-term capital investment fund under the authority of the E-rate program to support construction and installation costs. The purpose of this fund would be to build high-capacity broadband networks connecting schools and libraries that would not otherwise be able to have access to such capacity from the commercial marketplace. The E-rate program has already been used to provide funding for capital

[7] Companies such as airFiber and SkyFiber claim that they can deploy wireless systems carrying 1 Gpbs speeds in rural and unserved areas.
[8] "Fiber Optics Save Money," by Marice Richter, Community Impact Newspaper, Sept. 5, 2013, available at http://ht.ly/oAi3T. (According Mike Waldrip, Frisco's deputy superintendent of program evaluation and information services, "[t]here is great economy and increased efficiency in expanding our own fiber network as opposed to using services through outside providers.")
[9] www.midwestfibernetworks.com.
[10] www.sunesys.com.
[11] www.championone.net.
[12] www.uniteprivatenetworks.com.
[13] Unite Private Networks provides a list of testimonials of the benefits of fiber networks at http://uniteprivatenetworks.com/testimonials/.

investment on a case-by-case basis; the capital investment fund proposal would build off this past precedent.[14] The Commission could establish a separate and distinct application process for the E-rate capital investment fund analogous to the process it created for the rural health care program and provide explicit guidance to applicants about how to apply for such funding. Any entity would be eligible to apply for and receive such funding, including commercial companies, non-profit providers, municipalities, and schools and libraries themselves. The program could be structured for a short amount of time – perhaps three years – in order to speed the construction of these networks and meet the goals set forth by the President.

A capital investment fund will be especially valuable to schools and libraries in rural and high-cost areas where the commercial marketplace does not provide adequate broadband coverage. Funding network deployment for schools and libraries in rural areas will go a long way toward making rural areas more economically viable, and may trigger the deployment of additional broadband investment to homes and businesses in the region.

IV. The Commission should equalize the treatment of dark and lit fiber services, and applicants should be able to select the most cost effective option. Large, upfront non-recurring charges for fiber installs should be amortized over a several year period.

Dark fiber is an increasingly valuable option for anchor institutions and schools and libraries in particular. As the National Broadband Plan recognizes, dark fiber is often a cost-effective way for anchor institutions to solve their broadband and telecommunications needs. Providers of dark fiber typically deploy raw fiber optic capacity and allow end users to supply their own electronics to "light" the fiber. This gives the end user greater control over the operation of the network, allowing the schools and libraries to adapt the amount of bandwidth and the security features to their own individual needs.

The SHLB Coalition supports the equalization of dark fiber and lit fiber services, and applicants should be able to select the most cost-effective solution. The SHLB Coalition does not support a preference for dark fiber or any other technology; following the E-rate program's rule that cost must be the primary factor in selecting any service, schools and libraries at the local level should be able to select the most cost-effective broadband solution on a case-by-case basis. Furthermore, large, upfront non-recurring charges for fiber installs should be amortized over several years. If there is evidence that

[14] The funding for this capital investment fund would be in addition to the funding for the traditional E-rate program.

permitting dark fiber installation will jeopardize the fund even with amortization, the Commission should adopt an annual cap on the amount of E-rate funding used for dark fiber installation.

Dark fiber allows schools and libraries to maintain control of their own network electronics. Libraries and schools can contract with companies who have the expertise to manage everything from the initial planning and design, to permitting and construction project management, to installation and on-going management of the dark fiber network. Furthermore, allowing dark fiber to be eligible for support does not favor one provider over another. Any provider of dark fiber service is eligible to provide the service, including incumbent local telecommunications providers.

Unfortunately, the Commission rules disadvantage dark fiber because the rules do not currently permit dark fiber electronics or construction costs to be eligible for E-rate support. By making dark fiber eligible for support, the Commission can make the most efficient use of the limited dollars available because supporting dark fiber often requires less of a draw on the E-rate fund over the long term. Allowing dark fiber to be eligible for support opens up the field to a host of other non-traditional entities such as electric power companies, research and education networks, and municipalities, while also permitting incumbent carriers to provide dark fiber services if they so choose.

The statutory language allows support for dark fiber. Section 254(h)(2)(A) explicitly directs the FCC to adopt competitively neutral rules to promote "access to advanced service" by schools, libraries and health care providers. (emphasis added). This statutory provision permits support for services and facilities that provide "access" to advanced service and is not limited to traditional "telecommunications services." Dark fiber gives schools and libraries "access to" advanced services such as distance learning, on-line job training, on-line testing, e-government services and many other "cloud-based" services.

V. Managed Wireless Services Should Be Given Priority One Treatment.

The Ohio E-rate Consortium (OERC) has proposed that "managed wireless service" using unlicensed (Wi-Fi) spectrum should be given Priority 1 treatment under E-rate rules, just as commercial "hot spot" service offered by commercial carriers.[15] The SHLB Coalition agrees.

The "managed wireless service" as described by the OERC provides Internet access to mobile and Internet enabled devices in the classroom (or library), just like commercial hot spot service

[15] See *ex parte* correspondence from Rebecca Jacobs of Womble, Carlyle, Sandridge & Rice, in WC Docket 13-184 on behalf of the Ohio E-rate Consortium, August 16, 2013.

providers. The only difference is that the "managed wireless service" as described by the OERC uses unlicensed Wi-Fi spectrum rather than commercial cellular spectrum. This "managed wireless service," however, provides several additional benefits. For instance, it allows use with any device (BYOD or institution-provided device), so that users are not locked into a single service provider. Further, the service offers a comprehensive service providing more equity of access for all users. The service is also able to segregate traffic from students, teachers, administrators and guests and it can apply content filtering to comply with Children's Internet Protection Act (CIPA) obligations.

Perhaps most important is the potential cost savings that schools and libraries can achieve from using this service. The OERC claims that the service costs schools thousands of dollars less than commercial mobile hot spots while providing even greater flexibility and improved service. The affordability of this service could be especially important to schools and libraries in high-poverty or rural areas that do not have the resources to pay for commercial wireless spots or where commercial services are of poor quality or simply not available.

From our discussions with Ohio representatives, the service appears to work quite well and has been deployed in a number of Ohio schools. Because the service uses industry standard equipment that is not proprietary, these services have the potential to benefit libraries and schools in many other states and across the country. In fact, at least one SHLB member – Education Networks of America (ENA) – has already been deploying this service statewide in states other than Ohio.

The Eligible Services List already includes "mobile hotspot service" service as a Priority 1 service. The SHLB Coalition submits that similar services should not be treated differently simply because they use different frequencies, particularly when this "managed wireless service" using unlicensed (Wi-Fi) spectrum is so cost-effective and allows greater flexibility and a higher service quality than commercial hot spots.[16] The Commission should clarify that "managed wireless services", including the use of unlicensed (Wi-Fi) spectrum, should be treated as a Priority 1 service so that schools and libraries have an additional option to satisfy their connectivity needs and to make the most cost-effective use of the E-rate program.

[16] It is important to note that this request for clarification does not require the Commission to change its Priority 2 rules regarding the treatment of equipment. The OERC is not asking for Priority 1 treatment of the equipment, only the managed service.

VI. The Commission and USAC Should Clarify and Enforce the Lowest Corresponding Price Rule.

The Commission asks for comment in several places[17] about its "lowest corresponding price" rule. Under this rule, service providers must charge a school, library or library consortium "the lowest price that a service provider charges to non-residential customers who are similarly situated to a particular school, library, or library consortium for similar services" (unless the price is non-compensatory).[18] The Commission also proposes that service providers must certify that they comply with this rule.

The lowest corresponding price (LCP) rule deserves increased attention by the Commission and by USAC. A recent investigative story in *Pro Publica* indicated that the rule has not been subject to a great deal of enforcement, and that some carriers are not complying with the rule.[19] Bringing greater enforcement to the rule could help to bring pressure on the carriers to lower their prices for E-rate services (prior to the discount), which would also reduce the draw on the E-rate fund and allow the program dollars to go further.

While requiring service providers to certify their compliance with the lowest corresponding rule may be helpful, it may not be enough to ensure compliance. The Commission should make E-rate pricing information publicly available in a searchable database to help enforcement of the lowest corresponding price rule. The Commission and USAC should conduct regular audits of service providers regarding their compliance and should publicize the results. The Commission should announce that the service providers will be subject to penalties if they are found to be in violation of the rule. The Commission should also clarify what factors will be examined in determining whether a school or library is "similarly situated"; typically the service providers will try to explain away differences in pricing by citing differences that are not relevant. The Commission could, for instance, identify factors such as distance from a central office, type of technology used to provide the service, density of the market, etc. that are known to affect the cost of providing service so that USAC would know how to determine whether or not a customer is "similarly situated." Clarifying these criteria in advance will yield a more focused enforcement effort and put the service providers on notice of their obligations to adhere to the LCP rule.

[17] See paras. 39, 196, 202, 209-210, 300, and 309.
[18] 47 C.F.R. § 54.511(b).
[19] "AT&T, Feds Neglect Low-Price Mandate Designed to Help Schools," *Pro Publica*, by Jeff Gerth, May 1, 2012, available at http://www.propublica.org/article/att-feds-ignore-low-price-mandate-designed-to-help-schools.

VII. The Commission Should Allow Schools and Libraries to Serve as Community Hot Spots Without Using or Losing E-rate Funding.

The Commission seeks comment on whether to "permit schools to provide wireless hotspots to surrounding communities using E-rate supported services". (Para. 319) The Commission recognized that students' need for broadband access does not end when their schools' doors close for the day. It also recognized that allowing students and the community to have access to broadband after school hours could have several benefits, including helping students to do homework and promoting adult education, job training, digital literacy and online access to governmental services and resources.

The SHLB Coalition supports extending the principle established in the 2010 E-rate Order to allow schools and libraries to use their E-rate-supported broadband connections to serve as community hot spots. Encouraging such use will expand the benefits of the E-rate program. Providing free wireless Internet access to the community surrounding a school or library could be extremely valuable, and could help to meet the Commission's overall goals for promoting the widespread availability of wireless broadband.

The Petitions filed by the Oakland Unified School District and Revere Public Schools demonstrate that there is an interest in extending the reach of these services to the surrounding community. But the value of community hot spots is not restricted to schools; wireless hot spots can also be extended from libraries. In fact, several libraries have recently agreed to do just this. Just last month, the Gigabit Libraries Network announced that six libraries, including two state library consortia in Kansas and New Hampshire, were selected to participate in a pilot program to use "white spaces" spectrum to provide broadband access to the community. Over fifty library systems applied and more libraries are expected to be selected to join the trial in the near future.[20]

While community hot spots are a value to the community, the SHLB Coalition does not suggest that E-rate funds should be used to pay directly for the equipment or services used to provide community hot spots. There is already more demand on the E-rate fund than funds available.

At the same time, the E-rate rules should not impede a school or library that wants to serve as a community hot spot. Schools and libraries should have the option of supporting a community hot spot without losing E-rate support. If a school or library has enough bandwidth to support a community hot spot service, it should be permitted to allow that bandwidth to be used to provide wireless Internet

[20] See www.giglibraries.net.

access service to the surrounding community without having to cost-allocate out the capacity used for this service. This recommendation would simply build off of the precedent set by the Commission in the 2010 E-rate Reform Order allowing on-campus after hours use while allowing the use to extend off the library or school grounds. The Commission should clarify that schools and libraries may allow their bandwidth to be used for community hot spots without affecting the amount of E-rate support that they receive.[21]

VIII. Conclusion

Schools' and libraries' need for high-capacity broadband services will become even more urgent over the next few years. Many K-12 schools are implementing national Common Core testing, and these schools will need greater broadband capacity to satisfy their testing obligations. Public education is increasingly embracing individualized, "personalized learning" that uses mobile devices in the classroom. Public libraries are increasingly using advanced technology to provide digital literacy training, offering "maker spaces" to young entrepreneurs, supporting e-books, and providing on-line access to e-government, health and job training services. All of these trends will require schools and libraries to obtain higher-capacity broadband services than they have today. The SHLB Coalition urges the Commission to adopt the recommendations above to help schools and libraries obtain the affordable, high-capacity broadband that they need to meet the challenges of the 21st century.

Respectfully Submitted,

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September 16, 2013

[21] The Commission also asks (in para. 323) whether it should impose additional rules on the community hot spot service to protect the integrity of the schools' Internet capacity, such as whether community hot spot hours should be restricted to non-school hours, whether additional security requirements should be imposed, etc. The SHLB Coalition respectfully suggests that the schools and libraries have an inherent interest in ensuring that the community hot spots do not detract from the schools' or libraries' services and that further Commission rules are unnecessary.